

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Review of the Section 251 Unbundling)	
Obligations of Incumbent Local)	CC Docket No. 01-338
Exchange Carriers)	
)	
Implementation of the Local)	
Competition Provisions of the)	CC Docket No. 96-98
Telecommunications Act of 1996)	
)	
Deployment of Wireline Services)	
Offering Advanced)	CC Docket No. 98-147
Telecommunications Capability)	

**COMMENTS OF
THE PROGRESS & FREEDOM FOUNDATION**

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April 5, 2002

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SUMMARY

While the Commission surely has taken some steps to implement the Telecommunications Act of 1996 in the “pro-competitive, deregulatory” manner that Congress set as a guidepost, it has not done nearly enough to prevent the public utility-type regulatory regime traditionally applicable to the historically monopolistic narrowband world from spilling over into the new competitive broadband world. The effect of this failure has been to slow the deployment and use of broadband. This UNE review proceeding, along with a related set of “broadband” proceedings the Commission has initiated, offers the Commission a fresh opportunity to adopt a more deregulatory course.

The central purpose of these comments is to show that the Commission’s network unbundling rules can--and should--be modified in a deregulatory fashion that will promote technology-neutral facilities-based investment in new broadband networks. This can be done consistent with furthering all the statutory goals identified by the Commission, including the promotion of competition. In other words, the Commission can—and should—promote new investment and sustainable competition at the same time. To do so, it must first distinguish between, on the one hand, encouraging the creation of *competitors*, and, on the other hand, creating an environment in which *effective competition* can grow.

We discuss at some length--with extensive reference to the scholarly literature on investing, statements from financial advisors, and common sense--the real-world factors that drive infrastructure investment. These include factors such as potential earnings or cash flow, expected growth, associated risks and uncertainties, and future opportunities opened and closed by the decision to invest. We also explain in considerable detail the way in which managers of businesses use these financial variables in making decisions to invest and allocate scarce capital among competing alternatives. Having in mind this financial management-oriented foundation, we show why and how the Commission’s current overly regulatory and costly UNE regime, with its below book cost TELRIC pricing, has an adverse effect on the infrastructure investment incentives of the incumbent local exchange companies (“ILECs”). As significantly, we explain that the current UNE regime also creates adverse investment incentives for the competitive local exchange carriers (“CLECs”) and non-telephone company providers.

Our extensive analysis of the real-world impacts on investment, particularly with regard to broadband capabilities, of the current expansive and uneconomic UNE regime provides a sound basis for the Commission

to re-link its own actions to decisions that promote inter-modal facilities-based investment. The Commission then will have a principled basis for adopting a less costly, more deregulatory approach that is consistent with the 1996 Act's goals.

As for implementation, we discuss briefly several tools that the Commission can utilize to modify the current UNE regime in a deregulatory way. At a minimum, these tools should be applied as promptly as possible to remove new investment in fiber facilities from the UNE requirements. Exercise of the Commission's forbearance authority is one tool. With regard to broadband investment, the Commission has not used forbearance authority that new Section 706 of the 1996 Act granted it as one of the methods to "remove barriers to infrastructure investment." Moreover, the Commission possesses general forbearance authority under Section 10. It is true that Section 10(d) provides that the Commission may not forbear from the Section 251 and Section 271 requirements "until it determines that those requirements have been fully implemented." Certainly in those states in which the Commission decides that Section 271 applications should be granted, it has perforce made a determination that the 251/271 requirements have been fully implemented, and, therefore, forbearance from the unbundling obligations is permissible.

Narrowing the availability of the existing unbundled elements under the "necessary and impair" test, consistent with the other statutory goals, is another fruitful approach, although we caution that the Commission should be careful not to get bogged down in overly "granular" rules that are unlikely to keep pace with technological and marketplace realities. There is a real danger that overly granular approaches could prove administratively impractical. Finally, we urge the Commission to establish some form of meaningful "sunset" framework for the UNE requirements in order for the Commission to reach the facilities-based "end-game" it acknowledges best promotes consumer welfare.

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**COMMENTS OF
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I. INTRODUCTION AND BACKGROUND

The Progress & Freedom Foundation (“PFF” or “Foundation”), a private, non-profit, non-partisan research institution established to study the digital revolution and its implications for public policy, hereby submits these comments in response to the Notice of Proposed Rulemaking in this proceeding.¹ As the Commission observes at the outset, the proceeding’s purpose is “to consider the circumstances under which incumbent local exchange carriers (ILECs) must make parts of their networks available to requesting carriers on an unbundled

¹ The views contained in these comments are the views of the authors and do not necessarily reflect the views of the directors, officers, or staff of the Foundation.

basis” pursuant to the Telecommunications Act of 1996.² The Commission says it is undertaking a “comprehensive evaluation” of the current unbundling rules “to ensure that our regulatory framework remains current and faithful to the pro-competitive, market-opening provisions of the 1996 Act in light of our experience over the last two years, advances in technology, and other developments in the markets for telecommunications services.”³

As the leading think-tank studying the implications of the digital revolution, PFF has participated actively in various Commission proceedings concerning competition policies,⁴ including especially those proceedings concerning policies that impact the deployment and use of broadband networks and the development of sustainable competition among broadband infrastructures.⁵ The Commission often has relied on the views and information contained in our comments.⁶

As the Commission is aware, since shortly after the 1996 Act’s passage, PFF policy experts have advocated that the Commission implement the statute consistent with what we called our “containment philosophy.” We urged the agency to recognize that, while continued regulation of traditional narrowband

² *In the Matter of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers; Implementation of the Local Competition Provisions of the Telecommunications Act of 1996; Deployment of Wireline Services Offering Advanced Telecommunications Capability*, FCC 01-361, CC Docket No. 01-338, released January 15, 2002, at para. 1 (hereinafter “the Notice” or “NPRM”).

³ Notice, at para. 1.

⁴ Most recently, for example, see Comments of The Progress & Freedom Foundation, *Implementation of Section 11 of the Cable Television Consumer Protection and Competition Act of 1992*, CS Docket No. 98-82, January 4, 2004 (cable television ownership rules); Comments of The Progress & Freedom Foundation, *EchoStar Communications Corporation*, CS Docket No. 01-348, February 4, 2002 (EchoStar/Hughes license transfer application).

⁵ See, e.g., Comments and Reply Comments of The Progress & Freedom Foundation, *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, CC Docket No. 98-96, September 24, 2001 and October 5, 2002, respectively.

⁶ See, e.g., *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion and Possible Steps to Accelerate Such Deployment*

services might be necessary for some transitional period, “the threat of regulatory spillover from the traditional telecommunications world into the digital broadband world represents a clear and present danger to investment in and deployment of digital broadband services.”⁷ We have urged consistently that such “containment philosophy” would encourage deployment of broadband, enable continued expansion of the Internet, and foster the growth of electronic commerce.⁸

While the Commission surely has taken some steps to implement the 1996 Act in the “pro-competitive, deregulatory” manner that Congress set as a guidepost,⁹ it has not done nearly enough to prevent the traditional public utility-type regulatory regime applicable to the narrowband world from spilling over into the broadband world—and the effect of this failure has been to slow the deployment and use of broadband. Now, in this proceeding, along with the related set of “Broadband” proceedings the Commission has initiated contemporaneously,¹⁰ the Commission has a new opportunity to rectify the matter. It is important that the Commission do so without undue delay.¹¹

Pursuant to Section 706 of the Telecommunications Act of 1996, CC Docket No. 98-146, Report, 14 FCC Rcd 2398, notes 73, 121, 260 (1999).

⁷ See Comments of The Progress & Freedom Foundation, *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996*, CC Docket No. 98-146, September 14, 1998, at 1, and references therein, including Donald W. McClellan, “A Containment Policy for Protecting the Internet from Regulation: The Bandwidth Imperative,” Progress on Point, Release 4.5, August 1, 1997.

⁸ For this reason, we submitted comments urging the Commission not to impose a so-called “open access” regulatory regime on the cable broadband platform. See Comments of the Progress & Freedom Foundation, *Inquiry Concerning High-Speed Access to the Internet Over Cable and Other Facilities*, GN Docket No. 00-185, December 1, 2000.

⁹ The Conference Committee report accompanying the bill states that Congress intended “to provide for a pro-competitive, deregulatory national policy framework designed to accelerate rapidly private sector deployment of advanced telecommunications and information technologies to all Americans by opening all telecommunications markets to competition.” H.R. Conf. Rep. No. 104-458, 104th Cong., 2nd Sess., p. 113 (1996).

¹⁰ See *Development of a Regulatory Framework for Incumbent LEC Broadband Services*, CC Docket No. 01-337, FCC No. 01-360, released December 20, 2001; *Appropriate Framework for Broadband Access to*

There is no need to recite here the tortured history of the Commission's *Local Competition* order, with the network unbundling requirements at TELRIC prices at its core. Suffice it to say, as the Commission points out near the beginning of the Notice, that when the Supreme Court vacated the Commission's initial unbundling rules, it directed the Commission "to give substance to the 'necessary' and 'impair' standards, and to develop a *limiting* standard for imposing unbundling obligations that is 'rationally related to the goals of the Act.'"¹² Importantly, the Commission recognizes that finding that a network element satisfies the "necessary" or "impair" standard is a *minimal* test and does not automatically lead to designation of a UNE under the statute if such designation does not otherwise further the Act's goals.¹³

The Notice recites that in the *UNE Remand Proceeding*, the Commission identified five factors that further the statutory goals relevant to its unbundling determination: the rapid introduction of competition in all markets; promotion of facilities-based competition, investment, and innovation; reduced regulation; market certainty; and administrative practicality.¹⁴

the Internet over Wireline Facilities, CC Docket No. 02-33; FCC 02-42, released February 15, 2002; *Inquiry Concerning High-Speed Access to the Internet Over Cable and Other Facilities*, GN Docket No. 00-185, FCC 02-77, released March 15, 2002.

¹¹ While in some respects it may be commendable that the Commission has initiated these proceedings nearly contemporaneously and noted the relationships among them, it is not likely to be feasible or advisable for the Commission to decide all the issues raised in the related proceedings together on a timely basis in a so-called "comprehensive" fashion. Indeed, it is not likely even to be feasible or advisable for the Commission to decide all the issues in this UNE proceeding at one time in a comprehensive fashion. Rather, it is important for the Commission to begin providing some meaningful regulatory relief to the ILECs promptly to incent investment in new broadband facilities, and this may mean "staging" decisions as soon as the Commission is ready to act in a deregulatory fashion on discrete issues.

¹² Notice, at para.6, quoting from *AT&T v. Iowa Utilities Board*, 525 U.S. 366, 388 (1999).

¹³ Notice, at para. 21.

¹⁴ Notice, at para. 21.

The Commission rightly points out that it has said that the unbundling rules should be based on a preference for the development of facilities-based competition that provides long-run incentives for both the incumbents and new entrants to invest and innovate.¹⁵ Many times the Commission has uttered words to the following effect: “[I]n the long term, the most substantial benefits to consumers will be achieved through facilities-based competition, because only facilities-based competitors can break down the incumbent LECs’ bottleneck control over local networks and provide services without having to rely on their rivals for critical components of their offerings.”¹⁶ But its actions, for whatever reasons, largely have failed to match its facilities-based rhetoric.

The central purpose of these comments is to show that the Commission’s unbundling rules should be modified in a deregulatory way that will promote technology-neutral facilities-based investment in new broadband networks, consistent with furthering the other goals identified by the Commission, including promotion of competition. In other words, the Commission can—and should—promote new investment and sustainable competition at the same time.

By addressing the criteria identified by the Commission for designating UNEs, we now turn to showing, more specifically, how the Commission should change course.

II. DEFINING THE CRITERIA FOR EVALUATING UNE AVAILABILITY

¹⁵ Notice, at para. 9.

¹⁶ Promotion of Competitive Networks in Local Telecommunications Markets, Notice of Proposed Rulemaking and Notice of Inquiry in WT Docket No. 99-217 and Third Further Notice of Proposed Rulemaking in CC Docket No. 96-98, FCC 99-141, released July 7, 1999, at para. 4.

In the *UNE Remand Order*, the Commission set forth five criteria derived from the 1996 Act for evaluating whether a network element which satisfies the minimal “necessary” and “impair” standards in Section 251(d)(2)¹⁷ should be designated a UNE: (a) rapid introduction of competition in all markets; (b) promotion of facilities-based competition, investment and innovation; (c) reduced regulation; (d) market certainty; and (e) administrative practicality. The Commission seeks comment on the completeness of the list and the weight to be accorded each criterion.¹⁸ We address each one below, and we suggest that the Commission should also give weight to the additional statutory criterion of “technological neutrality.”

A. Rapid Introduction of Competition in all Markets

Promoting effective and sustainable competition should be a primary goal of federal policy. To succeed in that pursuit, the Commission must first distinguish between, on the one hand, encouraging the creation and ensuring the survival of *competitors*, and, on the other hand, creating an environment in which *effective competition* as a process can grow without government support in accordance with firms’ success in adapting to changing economic circumstances and meeting user needs.¹⁹ This is an important distinction that has not been given adequate weight in previous Commission UNE deliberations.

¹⁷ 47 U.S.C. § 251(d)(2).

¹⁸ Notice, at para. 21.

¹⁹ The standard work on the matter of “effective” or “workable” competition contains a good discussion of the importance of differences between elements of market structure, such as the number of competitors, and market conduct-related elements necessary for the successful performance of market competition. See John Maurice Clark, *COMPETITION AS A DYNAMIC PROCESS*, The Brookings Institution, Washington, DC, 1961, especially chapter 4, “What Do We Want Competition To Do for Us?”

The goal should not be creation and protection of competitors. Instead, it must be establishment of a clear regulatory framework within which all firms, without regard to history or technology platform, are encouraged to participate in ways that intensify rivalry among them as a means of creating value for consumers. It is clear in hindsight that the *Local Competition Order* was substantially motivated by the desire to encourage the creation quickly of numerous new entities to vie with incumbent local exchange companies.²⁰ Since promulgation of the initial order, the Commission's actions have shown little regard for contentions that competition is not a unidimensional, monolithic process and that different types of competition have different long term implications for creating consumer welfare. But it is undisputed that some kinds of competition promote long-term consumer welfare better than others.

The Commission observed in the *Local Competition Order* that the statute does not express an explicit or implicit preference for the three entry paths -- the construction of new networks, the use of unbundled elements of the incumbent's network and resale.²¹ As discussed more fully below, in retrospect it is clear that

²⁰ The *Local Competition Order* professed agnosticism on the preferred characteristics of the entrants it was enabling or the "type" of competition it was promoting. *Implementation of Local Competition Provisions of the Telecommunications Act of 1996*, 11 FCC Rcd 15499, 15509 (1996). While explicitly expressing no preference among resale, UNE, or facilities-based competition, the rules prescribed were quite clearly, if implicitly, designed to create competitors quickly in the hope that they might *somehow* mature to populate a market of sustainable competition. The Commission chairman at the time subsequently made this intention clear when he wrote that he "aspire[d] to provide new entrants...a fairer chance to compete than they might find in any explicit provision of the law." Former Chairman Hundt boasted that, "under our interconnection order," the capital markets funded 6000 Internet service providers and 250 new local telephone companies. Reed E. Hundt, *YOU SAY YOU WANT A REVOLUTION*, Yale University 2000, at 154, 193-94.

²¹ The Commission pointedly observed that "our obligation in this proceeding is to establish rules that will ensure that all pro-competitive entry strategies may be explored. *As to success or failure, we look to markets, not to regulation, for the answer.*" 11 FCC Rcd at 15509. (Emphasis supplied.) This is a fatal flaw in the Commission's approach, for it completely ignores the fact that the rules necessarily have an important impact on resource allocation decisions by incumbents and entrants alike. Both the

the broader goals of the Act support a distinct preference for one of the paths – facilities-based entry—and that the Commission policies have impeded facilities-based competition.

Experience under the initial rules confirms the foresight of those who argued at the time that the scope and pricing of UNEs are critical determinants of the long-term health and sustainability of competition enabled by the 1996 Act. Accordingly, we urge the Commission to recognize that merely creating and sustaining competitors does not necessarily, or even likely, equate to establishing the framework necessary to nurture the development of sustainable, effective competition. The Commission should embrace this fundamental point in redefining the goal of “rapid introduction of competition in all markets.”

B. Promotion of Facilities-Based Competition, Investment and Innovation

Failure to recognize differences in the economic welfare effects of competition created by different entry paths both contributed to, and was served by, ignoring the effect of the UNE rules on the second goal: “Promotion of facilities-based competition, investment and innovation.” The Commission’s professed indifference to the type of competition to be created and the eagerness to manufacture competitors is responsible for its failure to identify clearly and

determination of UNE requirements and the basis for their pricing have quite predictably influenced the choice of entry strategy as well as the quality and sustainability of the resulting market rivalry. For sure, the market has provided an answer, but the answer has been substantially predetermined by the Commission’s interconnection rules – the UNE rules plus the TELRIC ratemaking standard.

pursue one of the main goals of the Act -- to encourage investment and growth of infrastructure.²²

There are at least four good reasons for the Commission to redress this fundamental flaw by weighting investment in infrastructure more heavily in its decision making calculus. First, the Commission's statutory mandate requires it. Section 706 directs the Commission to "encourage the deployment ...of advanced telecommunications capability,"²³ and this can be achieved only by providing incentives for firms to invest in new network facilities.

Second, the construction of telecommunications networks to support ubiquitous access to advanced broadband services is a very capital intensive undertaking. Depending on the technology used, the types of service offered, and the take rate by subscribers, experience suggests that such networks may require two or more dollars of direct investment outlays in order to generate one dollar of revenue.²⁴ Depending again on the network -- its technology base, reach, size of the pipe and ubiquity -- required capital outlays may fall in the \$1,000 per household range.²⁵

²² Our review of the *Local Competition Order* suggests that the Commission simply assumed that the rules it was adopting to foster competitors was sufficient as well to encourage investment in infrastructure. However, there is no basis for this assumption in either the economics or the finance literature and certainly no support for it in the experience of the industry since 1996. See Larry F. Darby and Joseph Fuhr, "Investment Incentives and Local Competition at the FCC," *Media Law and Policy*, V. IX, No. 1, Fall 200, at 6-13, for a review of this literature and a fuller discussion of the incongruence of competition policy and investment policy. They conclude that "the determinants of investment and innovation are complex, highly circumstantial, and by no means exhausted, as the Commission implies, by consideration of the level of actual or potential competition." *Id.*, at 13.

²³ 47 U.S.C. § 157 nt.

²⁴ This range is representative of the ratio of capital expenditures to revenues reported in financial statements and assorted forecasts for new facilities-based, nationwide broadband networks. The economics of reach (how many subscribers served) and density (geographic coverage) are key discriminators.

²⁵ For a discussion of the determinants and range of CapEx per household for different technological and service architectures, see *Broadband!: A Joint Industry Study by Sanford and Bernstein & Co., Inc. and McKinsey & Company, Inc.*, January 2000.

Third, investment in modern, broadband networks is not a safe or even relatively secure use of funds compared to alternative investment opportunities. There is considerable uncertainty and risk, including technological uncertainty, uncertainty respecting the size and scope of consumer demand, regulatory uncertainty, and uncertainty about the intensity and general nature of market rivalry that ultimately may emerge. To encourage investment in broadband infrastructure, the Commission must recognize the size of the capital expenditures required and the risk profile of funds committed to broadband investment. As explained further below, regulation in this economic and financial context can be a powerful deterrent to investment.

Finally, the direct effects on consumer welfare of increased telecommunications investment are substantial. The Commission has recognized on numerous occasions, particularly in successive reports concerning Section 706 implementation, that broadband networks allow for the creation of new services, increase productivity, create jobs, and generally contribute substantially to the nation's economic welfare.²⁶

²⁶ Encouraging investment will contribute more toward creating consumer welfare in the long run than merely focusing indiscriminately on encouraging competitors or competition of any variety. The Commission's emphasis on competition has been driven by concern for two varieties of what economists call static economic efficiency -- "allocative" efficiency from having rates reflect the "right" cost concept and so-called "X-efficiency" which requires that costs be the lowest possible consistent with current technology and administrative efficiency. But the Commission to date has been less concerned with "dynamic efficiency" reflected by longer term resource allocation implications associated with the level and composition of investment and the rate of innovation. As to the relative importance of the two kinds of efficiency, Professor Scherer concluded his widely cited review of antitrust policy and economic efficiency as follows: "We know that many discussions of antitrust policy and efficiency have violated the New Testament injunction against beholding the mote and ignoring the beam. X-efficiency is much more important quantitatively than allocative efficiency, and dynamic efficiency is almost surely even more important." F.M. Scherer, *Antitrust, Efficiency and Progress*, 62 NEW YORK UNIVERSITY LAW REVIEW 1018 (1987).

Thus, promoting dynamic efficiency by shaping regulatory programs to encourage investment in infrastructure promises even more long-term economic gains than traditional regulatory efforts to force

There is mounting evidence that investment in telecommunications network facilities supporting broadband services is a principal driver of the information technology sector that, in turn, drives the macroeconomy.²⁷ Conversely, as a prominent group of leading economists wrote the Bush Administration in December 2001, “we believe that excessive and unwise telecommunications regulation is playing a significant role in the IT sector’s decline.”²⁸ This means that welfare gains realized in the telecommunications sector from rationalizing policy will spill over and be multiplied in other sectors and the economy at large.

For these reasons, while the Commission should promote sustainable competition, we recommend emphatically that—here and in other rulemakings—

rates toward some artificial measure of costs. This suggests that getting investment incentives right should rank with or above the Commission’s traditional concern with getting prices “right” and basing them on the “correct” cost concept and measurement. This conclusion is also supported by the authors of a comprehensive survey of the effects of economic regulation. See P.L. Joskow and N.L. Rose, “Effects of Economic Regulation” in *HANDBOOK OF INDUSTRIAL ORGANIZATION*, (Richard Schmalensee and Robert Willig, eds.) v. 2, North-Holland, at 1482-84, where they conclude: “The static gains and losses from regulation are probably small compared to the historical gains in welfare from innovation and productivity growth.” Of course, innovation and productivity growth are directly attributable to facilities investment and by no means assured by either resale or UNE platform.

²⁷ Several recent reports have also stressed the broader benefits to the economy of broadband network investment. TechNet, a consortium of leading information technology firms, has documented the links between telecom networks, health of the IT sector and macroeconomic performance as support for its call for a comprehensive national “Broadband Telecommunications” policy as the heart of a federal package designed to stimulate the domestic economy. See A National Imperative: Universal Availability of Broadband by 2010 (available at <http://www.technet.org/news/newsreleases//2002-01-15.63.phtml>). The Computer Systems Policy Project has also addressed the links between networks and socioeconomic welfare, while emphasizing the importance to each of the nature of industry and firm regulation. See “Building the Foundation of the Networked World” available at www.cspp.org. See also Robert W. Crandall and Charles L. Jackson, “The \$500 Billion Opportunity: The Potential Economic Benefit of Widespread Diffusion of Broadband Internet Access” available at http://www.criterioneconomics.com/publications_testimony.htm. See also Thomas M. Lenard, The Economics of the Telecom Meltdown, Progress and Freedom Foundation *Progress on Point*, Release 9.6, February, 2002, at 1-2, <http://www.pff.org/publications/pop9.6econ telecom.pdf>.

²⁸ Letter from Robert Crandall, Jeffrey Eisenach, George Gilder, Thomas Hazlett, Lawrence Kudlow, James Miller III, William Niskanen, and Alan Reynolds, December 4, 2001, <http://www.pff.org/publications/broadbandletter120401.pdf>.

the Commission give equal weight to the specific infrastructure goal mandated in Section 706 “to encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans...[by removing] barriers to infrastructure investment.”²⁹

C. Reduced Regulation

As PFF senior fellows have argued at length elsewhere, Section 706 is not merely hortatory, as the Commission thus far has construed it, but rather grants the Commission authority to forbear from regulation.³⁰ Most importantly for present purposes, such authority is granted specifically for use as a means to encourage the deployment of advanced telecommunications capability. The Act, then, accords “regulatory forbearance” the same rank as “measures that promote competition in the local telecommunications market” as a tool for promoting investment.³¹ Compliance with the statutory direction requires the Commission to take account in this and other proceedings the ways in which regulation is known to stifle investment and innovation.

D. Market Uncertainty

Certainty and security are highly valued by financial investors, business planners, and capital budgeters alike. Uncertainty converts directly to risk and dampens incentives to invest.

Uncertainty stems from both technological and market sources. The UNE rules under consideration here can either mitigate and dampen or aggravate and

²⁹ 47 U.S.C. § 157 nt.

³⁰ See Comments of the Progress & Freedom Foundation, *Inquiry Concerning the Deployment of Advanced Telecommunications Capability*, CC Docket No. 98-146, September 24, 2001, at 24-33. We ask that these comments be incorporated by reference herein.

intensify uncertainty originating from private sector sources. Regulatory delay, ambiguity, indecision, inconsistency, and asymmetries magnify uncertainties and risks associated with things such as rapid technological change, unknown costs of different technologies, immature demand, the business plans of rivals, and the actions of suppliers of inputs and complementary services. And, quite notably, at present, the uncertainty emanating from capital markets and the sluggish growth of the economy also exacerbates risks. It is incumbent on the Commission to implement rules that do not compound these external sources of uncertainty and risks in investing in advanced telecommunications facilities. As Chairman Powell put it aptly last October, “[s]ubstantial investment is required to build out these [broadband] networks and we should limit regulatory cost and regulatory uncertainty.”³²

E. Administrative Practicality

Administrative costs incurred by the Commission itself are significant, as partially reflected by consistent upward pressure on Commission annual budget requests. However, these pale in comparison to the administrative costs incurred by firms to comply with the Commission’s regulatory requirements. Such costs are borne directly or indirectly by consumers in the form of higher prices. The cost to regulated firms of compliance with increasingly complex and extensive Commission rules has the practical effect of imposing hidden taxes on users and shareholders. These hidden taxes convert to higher prices and higher costs of capital. Thus, we urge the Commission to consider not only the

³¹ 47 U.S.C. § 157 nt.

demands on its own resources and time, but also of the costly obligations its rules impose on the private sector.

F. Technological Neutrality and Deregulatory Symmetry

With the exceptions noted, the Commission has correctly identified the broader statutory criteria relevant to paring down UNE requirements from those that in the first instance may qualify under the “necessary” and “impair” standards. While the Commission could get to the correct policy result using only these five statutory criteria, it will help if the Commission also declares its intention to tailor the UNE rules in ways designed to bring them more closely into conformance with the requirement of technology neutrality -- neither favoring nor disfavoring development of any particular broadband platform.³³ We propose making the analysis of “technology and platform neutrality” more explicit and placing it squarely in the context of other goals governing the specification of UNEs.

The purpose of imposing rules is to constrain conduct that firms would otherwise find valuable to shareholders and undertake for that reason. Firms spared the burden of the UNE rules are conferred advantages in both end user markets and in capital markets, while the presence of UNE obligations and related regulatory constraints is a market hindrance to firms that bear them. The lack of technology neutrality amounts to regulatory handicapping -- placing unequal weights on contestants in the race to market. This results in a form of

³² Michael K. Powell, “Digital Broadband Migration—Part II,” October 23, 2001.

³³ Section 706 (c)(1) defines “advanced telecommunications capability” without regard “to any transmission media or technology.” 47 U.S.C. § 157 nt.

“regulated competition” or “cartel management” – a role for government that is particularly burdensome and unlikely to succeed in the context of the sector’s pervasive technological and market uncertainty.³⁴

Making the rules more nearly neutral with regard to different technological broadband platforms will be increasingly important as inter-modal competition continues to intensify and becomes the major form of market discipline imposed on all rivals. Services that are in essential respects identical should not be subjected to substantially different regulatory regimes. Failure to reduce regulatory disparity by establishing a uniform deregulatory regime undermines efforts to promote efficient resource allocation and to assure the survival and growth of firms that best meet consumer needs.

III. THE EFFECT OF THE UNE RULES ON INFRASTRUCTURE INVESTMENT

A recurring theme in the Notice is the Commission’s quest for information about the impact of its unbundling rules on the level and composition of investment in facilities supporting broadband services. Assuming that the

³⁴ The Commission simply does not have and cannot obtain the breadth and depth of information required to manage competition in ways that will assure preferred results. Doubters of this basic proposition should review carefully the requirements for regulated competition to yield results preferable to unregulated competition (even when the latter is highly imperfect) as spelled out in a variety of ways by David P. Baron, “Design of Regulatory Mechanisms and Institutions,” in *HANDBOOK OF INDUSTRIAL ORGANIZATION*, v.2 (Richard Schmalensee and Robert Willig, eds.) North Holland Press, NY, 1992 pp. 1347-1444. See also David Sappington and Dennis Weisman, *DESIGNING INCENTIVE REGULATION FOR THE TELECOMMUNICATIONS INDUSTRY*, esp. Chapter 8, “Competition, Regulation and Deregulation.” The conceptual considerations spelled out in these works are given empirical substance by the Commission’s efforts to report to Congress on the deployment of broadband. As impressive as the wealth of information adduced by the Commission for reporting to Congress may be, it is important to acknowledge the limits of what the Commission is really in a position to know about the deployment of broadband – its extent, drivers, constraints, and prospects.

Commission correctly weights the criteria discussed above, we take that as the central issue in this proceeding.

The question is critical, because its resolution will provide the “missing link” in the chain joining the 1996 Act and the overall performance of the national economy. The telecommunications infrastructure has been linked to the performance of the information technology sector, which in turn has been clearly linked to the performance -- jobs, productivity, growth and international competitiveness -- of the macroeconomy.³⁵ Rules that encourage broadband infrastructure investment can therefore be regarded not only as direct contributors to consumer welfare in the telecom sector, but also as critical components of a larger macroeconomic policy.

To understand the effects on investment in advanced networks of modifying the current UNE rules, the Commission first must consider the drivers of investment generally and, more particularly, the incentives for firms to invest in telecommunications infrastructure. The Commission cannot accurately identify the impact of UNE rule changes on investment outside the context of the incentives and disincentives underlying managerial decisions to undertake infrastructure investment in the first instance. With that foundation, the Commission can analyze how its rules influence those investment incentives; how firm behavior might respond to rule changes; and what the effects might be on the rate and composition of capital formation and deployment of advanced capabilities. The approach recommended here will allow the Commission to re-

³⁵ See references in note 28 *supra*.

link its analysis of the reasonableness and timeliness of broadband deployment to its own actions.³⁶

A useful starting point is simply to ask : Why invest? Most of us have a pretty good intuitive sense of what it means to invest. The first definition of “to invest” in our Webster’s New Collegiate Dictionary is: “to commit (money) in order to earn a financial return.” Firms invest to make money or, in financial textbook and annual report parlance, to create shareholder value or, in economic jargon, to maximize profits.

Personal experience and casual observation tell us that investment funds are limited; that some investments are relatively safe while others involve hazard; that a central feature of a good investment is the level of expected returns; and, that returns can come from periodic earnings or from growth in the value of the assets obtained for the initial cash commitment. We also recognize that a dollar in hand is more valuable than one to be received in the future, and that investing –committing and putting cash at risk -- both creates and forecloses opportunities for other pursuits. All of these things we know intuitively and from experience.

These commonsense notions are reflected more rigorously, but nonetheless faithfully, in mainstream capital budgeting techniques and contemporary management practice. In making real investment decisions and allocating scarce capital among competing alternatives, the profit motive and pursuit of shareholder value move managers to consider four factors: potential

³⁶ In three reports on broadband deployment the Commission has found deployment both “reasonable” and “timely” without examining the extent to which its own regulations either advance or create drags on the achievement of that objective. Linking the UNE rules, and others, to the rate and composition of

earnings or cash flow; expected growth; associated risks and uncertainties; and future opportunities opened or closed by the decision to invest.

The first three of these elements -- earnings, growth and risk -- are the variables influencing investment in classical discounted cash flow (DCF) analysis and the basis for determining the net present value (NPV) of an investment project. DCF-based analysis of the NPV of alternative investments is a staple of all MBA programs and courses in corporate finance.³⁷ Higher DCFs and NPVs encourage the commitment of scarce capital funds. Investors seek earnings and growth, which push up values. They try to avoid risk, which diminishes DCF and NPV.³⁸

The fourth element, the effect on future opportunities of a given decision to invest, is frequently likened to the value of an option created or foregone by the decision to invest in a given project at a particular point in time. For example, deciding to defer an investment creates an option to reduce uncertainty and risk by “waiting to see” developments in market demand, technology, conduct of market rivals, or regulatory change. Committing to an investment now sacrifices

investment will provide the Commission with the means for judging its own efforts to promote reasonable and timely investment.

³⁷ Details are available in any finance textbook and in selected economics texts. See for example, Zvi Bodie and Robert C. Merton, *FINANCE*, Prentice Hall, Saddle River New Jersey, 2000, ch. 6, “The Basics of Capital Budgeting,” or Donald A. Hay and Derek J. Morris, *INDUSTRIAL ECONOMICS AND ORGANIZATION*, Oxford University Press, New York, 1991 ch. 12, “Investment Expenditure.”

³⁸ The DCF model is not just an idle academic theory or conjecture. Surveys of business behavior uniformly report that DCF Models are used and that their use has expanded over time. For a detailed and comprehensive review and critique of investment behavior among US firms, see Michael Porter, Capital Choices: Changing the Way America Invests in Industry, a research report and synthesis presented to the Council on Competitiveness and sponsored by the Harvard Business School, June 1992 (mimeo). A survey of telecommunications firms investment behavior indicates that they too use DCF techniques and increasingly so. Erik Bohlin, *ECONOMICS OF MANAGEMENT OF INVESTMENTS: AN INTERNATIONAL INVESTIGATION OF NEW TECHNOLOGY DECISION-MAKING IN TELECOMMUNICATIONS*, Chalmers University of Technology, Goteburg, Sweden, 1995, p. 103.

those options.³⁹ Options create value, and because there is no obligation to exercise them, there is no associated downside cost or risk. By the same token, regulatory constraints (taking away options) create costs, with no clear offsetting upside opportunity for firms so constrained.

Pulling these considerations together indicates that a full specification of the investment function for making capital budgeting decisions can be expressed as the sum of traditional DCF and real options determinants. That is, the value added by investing is equal to the NPV of the investment (which is a function of risk, return and growth) plus the sum over all future periods of the value of options created or destroyed by the investment decision. In short, investment is driven by the desire and obligation of managers to create shareholder value, which, in turn, is estimable by the net present value (NPV) of revenues minus costs -- discounted at the appropriate risk adjusted rate -- plus the sum of all value created or eliminated by the exercise of new or existing opportunities.⁴⁰

This straightforward investment “model” can be used as the framework for Commission consideration of the impact on investment incentives and infrastructure development of the UNE rules. The framework is based on a recognition that the rules, collectively and individually, will have an impact on the investment incentives (expectations about earnings, growth, risk, and

³⁹ See Martha Amram and Nalin Kulatilaka, Real Options: Managing Strategic Investment in an Uncertain World, Harvard Business School Press, 1999 Boston, MA. Chapter 2 has a good discussion concerning when consideration of real options will add insight and value to traditional DCF/NPV valuations.

⁴⁰ These notions are expressed more rigorously, but with fundamentally the same meaning, in Lenos Trigeorgis and Scott P. Mason, chapter 2, “Valuing Managerial Flexibility” in Eduardo S. Schwartz and Lenos Trigeorgis, REAL OPTIONS AND INVESTMENT UNDER UNCERTAINTY: CLASSICAL READINGS AND RECENT CONTRIBUTIONS, The MIT Press, Cambridge MA, 2001. There are also several other valuable references to the real options literature there.

opportunity) for each actual or potential contender in the supply of broadband facilities.

These relationships are depicted by cells in the accompanying matrix that provides a structure for considering the positive or negative effects of various rules listed on the left hand side on incentives to invest of different types of firms listed along the top. Here for illustrative purposes we include ILECs, CLECs, and firms using other platforms -- cable, wireless, satellite, etc. Each cell represents the potential impact of a given rule on one type of investment incentive for a given type of firm. Analysis of the nature of the linkage between rules and investment incentive in each of the cells will help develop a sense of the way in which the rules affect investment and, in some cases at least, a pretty good notion of what the likely investment impact will be.

	Cash Flow			Growth			Risk			Future Opportunity		
	ILEC	CLEC	Other Platform	ILEC	CLEC	Other Platform	ILEC	CLEC	Other Platform	ILEC	CLEC	Other Platform
UNEs												
TELRIC												
UNE-P												

This rules/investment incentives approach makes clear at the outset how broad and complex the linkages are between the UNE regulatory scheme and *total broadband investment*. The matrix allows for considering together the nature of the investment incentives included in the *Local Competition Order* as a

way to get a sense of the nature of the linkages and their implications in the present UNE proceeding.⁴¹ The following illustrates how.

The purpose of the UNE rules was to create a climate congenial to the creation and growth of a new class of firms, the CLECs. The rules advanced that purpose by giving privileged access to incumbent assets and required transfer to entrants of part of the value of past incumbent investment decisions. These assets were subdivided into individual elements and priced at rates established at levels below current book costs. But, more importantly, they were priced in the aggregate at below the level expected by managers when the investment decision was made *and* below the level facilities of comparable quality, scale, and scope could be provided by new entrants for their own use.

A. Adverse Investment Incentives on ILECs

Consider first the effects of the UNE requirements on the investment incentives of ILECs. The impact depends on how many and what kinds of network elements are included, and also on the rates that incumbents (entrants) can or must charge (pay) for them. Investment incentives will change with either. It is known and was intended that the UNE rules require incumbents to provide

⁴¹ We anticipate some objections to this framework for analysis. Some may argue that the causal relationships between the variables are not easily estimated and are subject to circumstantial differences. Others may argue that the analysis is too complicated, or too theoretical, or subject to too much uncertainty for the Commission to undertake as the basis for important policy decisions. We anticipate terms like “imprecise”, “inconclusive”, “too subjective” and the like intended to diminish perceptions of its usefulness. We respond by pointing out the exposure of other useful Commission regulatory tools to similar arguments. The Commission’s methods for determining the cost basis for rate levels and rate structures are prime examples. We have no doubt that the Commission could successfully derive valuable insights about rules/investment links with a fraction of the level of private and public effort expended to design the cost accounting/simulation models on which TELRIC and universal service fund inputs are derived. Compare as well the resources used in devising jurisdictional separations procedures and assorted efforts related to “universal service.” Beyond that, rejection of this approach for any of the above or related reasons leaves the Commission with no method grounded in established investment theory or business

unbundled facilities at below book costs. This is not the place to reargue the shaky foundation and “economic theory” underlying TELRIC, but it has been widely observed, correctly in our view, that a regulatory requirement to price facilities at less than what was paid for them constitutes a disincentive to invest in similar facilities likely to be subjected to the same rules. While there is little debate over that principle, the strength of the incentive effect can be estimated only with data describing the actual operation and financial impact of the rules. Such details, based on estimates of actual operating data in the context of carrier financial accounts, are seldom considered in the context of analyses of investment impacts.

Fortunately, a recent study from the financial community contains cost and revenue figures that provide the basis for better empirical estimates on a national basis of the financial effects and investment incentives of the UNE rules.⁴²

TABLE 1: UNE-P PRICES IN RELATION TO THE RBOC’S FINANCIAL BOOKS

	BellSouth	Qwest	SBC	Verizon
Basic UNE-P	\$20.97	\$26.80	\$19.88	\$24.14
Basic UNE-P + features	\$21.67	\$28.79	\$20.96	\$24.20
Full UNE-P	\$26.61	\$29.49	\$22.10	\$24.31
Average revenue per line*	\$62.65	\$56.45	\$57.37	\$57.55
Average cash cost per line*	\$31.79	\$32.76	\$32.59	\$33.26
Average depreciation and amortization per line	\$13.22	\$11.77	\$12.55	\$11.50
Average total operating cost per line*	\$45.01	\$44.52	\$45.14	\$44.76
Full UNE-P as % revenue	42%	52%	39%	42%
Full UNE-P as % total operating cost	59%	66%	49%	54%

Sources: Company reports and Commerce Capital Markets estimates.
BLS, SBC, and VZ information as of Q3’01. Q information as of Q4’99.

practice for determining how its rules influence investment incentives regarding advanced services infrastructure.

⁴² Anna-Marie Kovacs, et al, “Status and Implications of UNE-Platform in Regional Bell Markets”, Telecommunications and Broadband Services Industry Report, Equity Research Group of Commerce Capital Markets, Philadelphia, PA, November 12, 2001.

The last two lines of the table show security analysts' estimates of the shortfall of UNE-P revenues to cover operating cost incurred in the provision of the UNE-P or to compensate for end user revenue lost as a result of sale of the UNE-P. The last line indicates that revenue from selling a full UNE-P falls short of covering total operating cost. For illustrative purposes, we will look at BellSouth (but the figures—and the implications—are very similar for the other BOCs.) Revenue per line sold to end users averaged \$62.65 during the test period, while average total operating cost (cash costs plus depreciation and amortization) per line was \$45.01.⁴³ The difference, \$17.64, measures average earnings per line before interest and taxes (EBIT) and converts to a 28% margin (EBIT divided by revenue).

The plain meaning of these numbers is that, on average, the sale of a line to an end user covers all operating costs including capital consumption and leaves a substantial share of the revenue (28%) to repay other obligations: taxes to government; interest to bondholders; and compensation to shareholders for the use of their wealth and for their risks.

These or closely related values are used by BellSouth management as indicators of the value to shareholders of investing in new plant. Similar calculations apply in the case of upgrading lines in the sense that there too management will look at the margins between costs and revenues to assess the value created for owners. Capital and investment theory and practice agree that

⁴³ The data assume: 1500 MOU; toll to local ratio of 1/3; three minute average call duration; 80% of calls require interoffice routing; new UNE-P lines are 10% and migrated UNE lines are 90%. These are rationalized and their implications discussed at Kovacs, *supra* note 42., at 5.

positive, secure and growing EBIT margins encourage risk taking and investment in broadband technologies.

Now consider the same kinds of calculations when the line is not sold to an end user, but rather as a UNE-P to a CLEC, in accordance with the Commission's UNE rules and under rates that are representative of rates being established at the state level under the TELRIC methodology.

We observe in the table that the revenue generated by the sale of a full UNE-P to a CLEC is \$26.61 – or about 42% of the revenue obtained by BellSouth when it sells the same service to an end user. This implies that if the CLEC successfully attracts the user of that line away from BellSouth that the net of the transaction has been to reduce BellSouth's revenue by \$36.04 (the difference in the full UNE-P charge to a CLEC and average revenue per line sold at retail to the same subscriber). The \$36.04 represents a measure of the cost in lost cash flow (lower EBIT) to BellSouth of losing a line to a CLEC using a BellSouth-provided UNE-P. The ILEC loses revenue but no cost from the transaction.⁴⁴

The EBIT margin for sale of a UNE-P to a CLEC can be calculated as before: revenue from sale of UNE-P (\$26.61) minus operating cost (\$45.01) is NEGATIVE \$18.40, which divided by revenue yields an EBIT margin of NEGATIVE 69%. *Thus, each dollar of UNE-P revenue leads to operating losses of \$.69.* The investment implication is inescapable and was made clear by a

⁴⁴ And the firm gets no financial comfort or offsetting incentive to invest from assurances that the revenue from the CLEC is above the computer simulated, long run incremental cost that might prevail in the future if the most efficient technology is used.

leading industry executive over three years ago. “No company will invest billions of dollars to become a facilities-based broadband services provider if competitors who have not invested a penny of capital nor have taken an ounce of risk can come along and get a free ride on the investment and risks of others.”⁴⁵

These calculations make clear why incumbents resist expansion of the scope of the UNE rules and increased discounts for UNEs. The provision of UNEs at TELRIC-based rates is a terrible business that no investor will finance. On a stand-alone basis it generates substantial operating losses and makes NO contribution to taxes paid and to paying interest on the debt acquired to finance the network elements, and NO compensation to the owners of the assets they are using.⁴⁶ Other services and other users of the network must subsidize these differences if the firm is to remain viable in the long run.

Businessmen do not knowingly and voluntarily risk shareholder wealth in lines of business that are not expected to cover long run costs as perceived and measured at the time of the investment decision. More specifically, they will not – absent some other extenuating circumstance -- rationally substitute one revenue stream for another, where the switch results in revenue loss. It is no surprise that you have an increasing number of investment advisors commenting

⁴⁵ Address of C. Michael Armstrong, Chairman & CEO, AT&T, Washington Metropolitan Cable Club, November 2, 1998.

⁴⁶ Voluntary wholesale/retail arrangements of value to both parties are widely observed in economy. The existence of these arrangements reflects two facts: first that value (cost saving, convenience, general product/service quality, etc.) is created for end users by the arrangement and b) the value commonly created by the parties is shared between the parties. The division of the common value is determined by negotiation. That parties participate in the agreement makes clear that they each capture enough of the value to make them better off for participating. The wholesale-retail relationship embodied in the UNE rules is not voluntary and is not sustainable in the long run without significant alteration.

on the adverse effect on the ILECs of the current UNE regime. For example, a J.P Morgan analyst recent wrote:

Core voice margins should continue to deteriorate despite potential changes to the wholesale platform. Under UNE arrangements the Bells are forced to provide competitors with elements of their network at anywhere from a 50% to an 80% discount to their retail price. Yet between 85% and 95% of the Bells costs are fixed. The loss of retail lines to wholesale competitors thus places significant pressure on overall wireline margins.⁴⁷

Another recently commented: "In our view, the key to investment by the RBOCs in DSL via DLCs is the lessening of restrictions surrounding treatment of DLCs as so-called 'unbundled network elements' or UNEs."⁴⁸

Rigorous investment models are not needed under these circumstances to establish that the incentive of incumbents to invest in new facilities is diminished. Interpreted in terms used by the classic DCF model, the illustration used above suggests that the UNE rules have a negative impact on each of the DCF value drivers. Cash flow from BellSouth operations is clearly diminished by \$35.27 per month for each line sold to a CLEC. Total risk is increased-- market risk from the support offered to direct competitors, as well as financial risk from the failure of the UNE business to make any contribution to interest coverage. Growth prospects in new business segments are diminished with the increase in CLEC market share capture.

It has been suggested that the UNE rules will encourage ILEC investment by stimulating competition from entrants. But in view of the foregoing, it is

⁴⁷ M. Crossman, "Wireline Services/Incumbents: The Bells: Consolidation?" J.P. Morgan, March 21, 2002, at 1-2.

⁴⁸ J. Kedersha and J. Makris Adams, "FCC Comments Positive for AFCI: Regulatory Relief Could Stimulate Investment Cycle," Harkness and Hill, Inc., February 15, 2002, at 1.

difficult to find any basis for that contention. Clearly, the UNE rules in the first instance create financial harm and an associated disincentive to invest. From whence might come the offsetting benefit or incentive to invest? In the case of loss of revenue, customers, or market share to firms using another technology platform, an ILEC could invest in new, better facilities and improve service as a means of attracting users back to the telephone platform and recapturing the lost value. In the case of shareholder value lost to UNE based competitors, however, no capital improvement or improvement in the quality of ILEC networks can be used as a competitive device to recapture market share loss, because any such improvement must be made available to UNE-based competitors. Thus, every market advantage that might be created by an improvement in ILEC infrastructure is substantially, if not fully, cancelled by the fact that the advantage will be more than offset by the sharing requirement.

In sum, the effect on ILECs of the current UNE regime, including the TELRIC rules, has been to reduce expected cash flow, reduce growth prospects, and to increase risk -- all creating negative effects on ILEC incentives to invest. The obligation to serve competitors (a negative option) dramatically increases risk. While this result is straightforward and uncontested, its implications have not been acknowledged and reflected by the Commission in policy. This proceeding creates an opportunity for the Commission to rethink earlier decisions by eliminating, or at least reducing substantially, this investment-inhibiting effect.

B. Adverse Investment Incentives on CLECs

The short run incentive effect of the UNE rules on CLEC investment appears to have a strong negative bias. In the traditional analysis of “build or lease” decisions, managers compare the costs and associated revenue of each option and the longer-term implications for both. Referring back to the table, the cost to a CLEC of leasing a UNE-P from BellSouth, rather than investing only in some of its constituent parts, is reflected by the estimated UNE-P rate of \$26.61 per line. That approximates the full “infrastructure” cost to the CLEC of using ILEC plant.

Unfortunately, we do not have good, comparable estimates of what it would cost per line for a CLEC to replicate an ILEC’s network. Actual costs are driven by circumstances so diverse that the use of gross averages creates more analytical problems than it solves. Even assuming for the sake of argument the reasonableness of the TELRIC-based cost estimates for the ILEC, such estimate is not necessarily, or even probably, a good estimate of what it would cost a CLEC. The actual CLEC costs incurred in today’s marketplace would no doubt be substantially higher than the computer-simulated, hypothetical costs of a “Green Field” ILEC network embodied in the TELRIC calculations. CLEC capital costs are much higher and currently at least nearly prohibitive. The TELRIC costs reflect ILEC economies of scale and scope that are not available to a startup or relatively new CLEC. For these and other reasons, the current rates

for use by CLECs of ILEC networks are in most instances well below what it would cost entrants to replicate incumbent facilities.⁴⁹

Thus, there is very little reason to doubt that the effect of the UNE regime is to allow entrants to avoid the costly facilities route to market entry and instead use the less costly option of “easy riding” on incumbent networks. In the parlance of Real Options theory, the UNE rules create for entrants the option to avoid technological and financial risk associated with investment in modern telecommunication networks by exercising the non-investment entry option created by the UNE rules.

This dampening effect on CLEC investment incentives, which has been validated by marketplace events, may not have been fully anticipated by the Commission. By creating the option for CLECs to lease UNEs from incumbents, then increasing the value to CLECs of that option by pricing the leases at very favorable rates below ILEC book costs, the Commission’s rules have discouraged CLECs from investing in facilities and encouraged them to rely on facilities provided by their principal competitors. This despite the warnings of leading investment analysts and advisors to the effect that only facilities-based competition has a chance of long-run survival.⁵⁰ Typical of these warnings from

⁴⁹ If that is not true, then the whole premise of the UNE/TELRIC package is simply incorrect.

⁵⁰ In a discussion of the prospects for CLEC competition in the future, Dan Reingold of Credit Suisse First Boston stated: “First, as we have long argued, facilities-based competition is the only method of competing against the RBOCs in the long run.” Dan Reingold and Julia Belladonna, RBOC/ILEC Review and Update, Credit Suisse First Boston, June 1, 2001, at 5. Similarly, Bruce Roberts, telecommunications equities analyst for Dresdner Kleinwort Wasserstein, noted that three quarters of CLECs market share “comes from using leased RBOC facilities, which is an unsatisfactory long term strategy.” Further, “for a CLEC to be successful in terms of long run profitability, it must build its own network[and] we believe that CLECs will have to provide service over their own networks in order to succeed in the long run.” Bruce J. Roberts and Stephen H. DeLucia, “Deactivate Panic Button”, Dresdner Kleinwort Wasserstein, June 27, 2001 at 9.

It has been suggested that UNEs might provide a short term platform for migration in the long run to facilities-based competition. Support for that proposition is argument by analogy to the development of long

investment analysts is the statement, issued only last month, that “we do not believe that lower UNE rates would necessarily result in increased competition (at least not to the extent that regulators might expect), because the platform remains, by itself, a nonviable business model over the long term, in our opinion.”⁵¹

Furthermore, the use of substantial UNE discounts by some CLEC competitors makes it more difficult for other CLECs that otherwise might be disposed to follow a facilities-based entry strategy. A would be facilities-based competitor may find that its main rival is not an ILEC, but a CLEC using the options created by the UNE rules. In this context, the Commission’s failure to limit the scope and price of the UNE platform discourages further a facilities-based strategy by a given CLEC or its rivals.

distance competition. Fuller analysis of the analogy might well find it misplaced in part due to the very different circumstances then in the IXC market and now in the market for local network elements. The major difference has to do with nature of the technology and facilities being used and the longer term opportunities of new entrants then and now. The competitive Specialized Common Carriers used transmission capacity obtained under dramatically discounted, but still fully cost consistent, bulk rate tariffs offered by AT&T to the trade, combined with dramatically “inferior” access to local networks obtained from tariffed services. The differences between then and now are at least twofold. First, the rates paid then by entrants were compensatory to the incumbent and thereby only reduced, but did not completely destroy, the incentive of incumbents to upgrade the facilities with new investment. Secondly, and more importantly, the new entrants used whatever free cash flow the combined discounts and minimized capital expenditures generated to leap frog the existing largely analog, voice optimized, circuit switched network and invest instead in lower cost, higher quality, more service-versatile digital networks. The difference, of course, with current local markets is the fact that the issue is not application of the discounts to elements of the old network and technology but to the new as well. Thus, a policy that allowed entrants access to old technology at rates below book may have made sense, inasmuch as it allowed new competitive entrants to avoid the need to invest in outdated plant, while providing them the wherewithal to invest in new digital infrastructure. But, if the same rules are now applied to the most advanced networks of incumbents, there is nothing to leap frog and little incentive to build more modern plant, because entrants are already getting such facilities -- without risk -- at or below the cost of making service available from facilities-based networks they would build, own and operate themselves without relying on elements of incumbent networks.

While some might continue to embrace the migration to facilities theory as the basis for maintaining and expanding UNEs, they should be required to reconcile that with the clear constraint on the number of facilities-based competitors that can be supported in the local broadband market. With four different facilities platforms contending for share in the local market, there is not likely to be much room under current techno-economic realities for dozens of facilities-based, local competitors using telephony-like platforms.

⁵¹ G. Miller, C. Zaloum, and P. Enright, “Fourth-Quarter Wrap-Up—What Has Changed,” ABN AMRO, March 1, 2002, at 9.

In sum, not only has the UNE approach had the effect of discouraging investment in advanced services by incumbents, it also has had the largely unanticipated and unintended consequence of dampening the incentive of new entrants to invest.⁵²

C. Adverse Investment Incentives for Other Technology Modes

Potential negative effects of the UNE/TELRIC package on the investment strategies of intermodal competitors have also been unanticipated, unwanted artifacts of the UNE rules. By discouraging and delaying investment by incumbents and entrants using the telephone platform, the UNE rules create for builders of other platforms the opportunity to save costs (thereby creating value) from delaying the rollout of improved networks.

There is, of course, some value to being early to market. Frequently, it is easier to win customers who have no service than to convert customers using close substitutes. However, delay in the introduction of broadband by providers using a wireline platform creates an option to delay service by deferring investment in facilities using rival technologies. That delay option creates value for intermodal rivals by, among other things, allowing them to wait for new information to resolve market and regulatory uncertainties, alternative technical approaches, and other rivals' plans.

⁵² The Commission recognized this as a theoretical possibility in the original *Local Competition Order*, but did not give it any decisional significance. In discussing the merits of different costing approaches as the basis for UNE rates, the Commission observed with respect to TELRIC and the severance of the cost basis for rates from book costs: "This approach, however, may discourage facilities-based competition by new entrants because new entrants can use the incumbent LEC's existing network based on the cost of a hypothetical, least-cost, most efficient network." 11 FCC Rcd at 15848. But having recognized the possibility, the Commission neither pursued its analysis of that potential, nor reflected it in the final rules.

The Commission has recognized this effect in its insistence that development of competitors to ILECs will increase the incumbents' incentive to invest more and faster as a means of hedging against early loss of market share. By the very same logic, delay in the ILEC and CLEC investment plans creates opportunity and option value for non-wireline platform providers to delay.⁵³

IV. REFLECTING PRO-COMPETITIVE, DEREGULATORY ACTIONS IN THE UNE RULES

We have set out above at length a principled basis for reorienting the Commission's goals in a way that bridges the gap between the Commission's current UNE regulations and a policy that promotes investment in infrastructure.

There are several tools the Commission can utilize more fully than it has thus far to modify its UNE regime in a deregulatory way that accomplishes the goal of stimulating investment while promoting competition.⁵⁴ Here we offer brief comments in highlighting the most promising of a package of tools, confident that the Commission can employ them consistent with the Communications Act once it decides to change course. In the near-term, the Commission should accomplish the desired paring back of UNE regulation either through "forbearance" from regulation or "redefinition" of some existing UNE elements as

⁵³ For a fuller development of this option and how specifically to value it, see Robert McDonald and Daniel Siegal, "The Value of Waiting to Invest" in Schwartz and Trigeorgis, *REAL OPTIONS AND INVESTMENT UNDER UNCERTAINTY*, supra, at note 40.

⁵⁴ The costs of regulation are never trivial and frequently substantial. They occur in numerous different guises and include, for example, budgetary costs of the regulatory agency, direct costs of compliance for regulated firms, costs of delay, costs of uncertainty and added risk occasioned by unclear and ephemeral rules, costs of inefficiency and resource misallocation as firms respond to administratively determined costs and revenues (some call it "regulatory arbitrage"), costs of foregone or slowed innovation and, importantly, costs of lessened competition. For a more detailed discussion of the level and implications of these costs, see Statement of Larry F. Darby before the Subcommittee on Telecommunications, Trade and Consumer Protection, Hearing on H.R. 3850 The Independent Telecommunications Consumer Enhancement Act of 2000, July 20, 2000.

no longer meeting the statutory test. As a longer-term tool, the Commission should employ some form of “sunsetting” as a means of recognizing and harnessing the disciplinary force of increasing intermodal competition.

A. Forbearance

There is a strong policy basis for not allowing legacy public utility-type regulations designed for entirely different economic and technological circumstances to be applied to new markets, technologies, and services. Forbearing from regulation of “new” investment supporting the provision of advanced services by ILECs will allow the Commission to tailor its regulations to specific market characteristics; stop regulatory “creep”; and allow for gradual deregulation as older facilities becomes obsolete and are replaced, and as facilities-based competition from other platforms grows. Details of the forbearance rules can be crafted to reflect the substantial and increasing intermodal rivalry among providers of advanced services, without risk of leaving unchecked undue market power in the provision of basic voice services.

As explained at length by PFF in the Commission’s most recent Section 706 inquiry,⁵⁵ the Commission should reconsider its earlier position that Section 706 does not constitute an independent grant of forbearance authority. As demonstrated in our comments, which we ask to be incorporated herein, the

⁵⁵ See Comments of The Progress & Freedom Foundation, *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996*, CC Docket No. 98-146, September 14, 1998, at 24-33. As shown therein, exercise of this forbearance authority is not dependent upon a finding that deployment is not proceeding on a “reasonable and timely” basis. Rather, the Commission has a mandatory obligation to take actions that “remove barriers to infrastructure investment,” including the use of “regulatory forbearance.” 47 U.S.C. 157nt.

Commission does possess discretion under that Section to forbear from imposing common carrier-like unbundling and rate obligations on ILEC provision of broadband investment if it finds that such forbearance will encourage more reasonable and timely deployment of broadband capabilities.

Even if Section 706 is not an independent source of forbearance authority with respect to the UNE rules as they apply to broadband services—and we think it is—the grant of general forbearance authority in Section 10 of the Act also offers a route for regulatory relief from unbundling obligations that are no longer necessary to protect consumers or the public interest.⁵⁶ Section 10 (d) provides that the Commission may not forbear from the Section 251(c) unbundling obligations (or the Section 271 requirements) “*until it determines that those requirements have been fully implemented.*”⁵⁷ Certainly, in those states in which the Commission already has determined that a BOC’s application for Section 271 authority should be granted, it has perforce made a fact-intensive determination that the 251/271 requirements have been fully implemented. In these states, the Commission’s authority to forbear from UNE requirements is incontestable.

We urge the Commission to use—finally—its forbearance authority rather broadly, consistent with the infrastructure and competition-promoting understanding of the statutory goals that we have set forth above.⁵⁸ Apart from

⁵⁶ 47 U.S.C. § 160.

⁵⁷ 47 U.S.C. § 160(d).

⁵⁸ Here we are focusing on “forbearance” from regulation as traditionally understood—that is, exercising discretion not to apply regulation that otherwise applies. This does not mean to imply that other approaches, such as defining broadband as “information services” which are not subject to Title II requirements, are not also potentially fruitful deregulatory approaches. See *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities*, CC Docket No. 02-33; FCC 02-42, released February 15, 2002; *Inquiry Concerning High-Speed Access to the Internet Over Cable and Other Facilities*,

other actions the Commission may take to constrain the scope of UNE availability, at a minimum, the Commission should forbear from applying the unbundling requirements to new investment to be used for provision of broadband services.⁵⁹

B. Narrowing the Availability of Existing Unbundled Elements.

As discussed above, to be made available as a UNE under the current rules, a particular element must pass three tests – the “necessary” test, the “impair” test, and the “statutory goals compliance” test. Principled application of this tri-factor test with an eye towards the investment-oriented considerations discussed above is very likely to result in a substantial shrinking of network elements now covered by the rules.

The Notice is quite detailed in soliciting comments concerning how it might fine tune and otherwise make more specific distinctions between elements that do or do not pass the triple tests, for example, by virtue of “granular” characteristics such as geographic location, type of customer, type of facilities, capacity considerations, or the like.⁶⁰ We believe it is particularly fruitful for the Commission to focus on removing new facilities investment in fiber to the home

GN Docket No. 00-185, FCC 02-77, released March 15, 2002, where this “definitional” deregulatory approach is proposed.

⁵⁹ See Tom Tauke, “Laying the Last Mile,” Aspen Summit Conference, The Progress & Freedom Foundation, August 21, 2001. <http://newscenter.verizon.com/proactive/newsroom/release.vtml?id=60328>

⁶⁰ Notice, at paras. 34-46.

from the UNE regime, and the other “granular” possibilities warrant serious consideration as well.⁶¹

For our own purposes, we are not responding here in any detail to the inquiries concerning the various “granular” possibilities for achieving a less regulatory UNE regime. Based on what we have already said, obviously our view is that the less expansive the UNE regime the better, and that timeliness is important as well. In that vein, on the scope of the unbundling obligation, we are content to urge the Commission to be mindful of the considerable weight to be accorded the twin goals of promoting infrastructure investment and fostering long-term sustainable facilities-based competition. Without this new focus, the Commission risks continuation of protection of competitors and promotion of *faux competition* that requires enduring government support and subsidy from incumbents for its survival.

The Commission’s inquiry concerning the treatment of the individual UNE elements is instructive on our point concerning timeliness. The Commission should approach the task at hand with the idea it will act as soon as possible to reduce some aspects of UNE regulation if it is unable to act more “comprehensively” without delay. For example, the Commission should be able to act in the near future concerning whether it should expand its switching “carve out” or eliminate switching altogether from the platform. The Notice itself

⁶¹ While certain of the Commission’s suggested “granular” characteristics may prove useful in deregulating if, for whatever reason, the Commission fails to take the broader approaches we advocate, the Commission should carefully consider the administrative and enforcement burdens which implementation of a granular approach poses. In light of the dynamic nature of the marketplace and the technology, there is a very real risk that the costs of regulatory lag might outweigh the benefits if the Commission ends up with an overly “granular” system that cannot keep pace with technological and marketplace realities.

indicates the extensive briefing that has already taken place through comments and *ex partes*,⁶² so switching is a good candidate for early action by the Commission in a deregulatory direction. Apart from the direct positive benefits of removing from UNE regulation an element which no longer meets the statutory test, indications that the Commission has the will to begin moving in a deregulatory manner on a timely basis would send positive signals to the investment community.

C. Sunsetting Existing Regulation

It is encouraging that the Commission solicits comment on the desirability and consistency with the statute of imposing “absolute temporal boundaries on UNE availability, including approaches in which specific...[UNE requirements]... would sunset at a date certain.”⁶³ Secular and uninterrupted growth in the number and volume of rules originating in Commission proceedings, as well as observation over time, indicates that there is a “ratchet effect” and an asymmetry that makes it easier to impose restrictions than subsequently to lift or lessen them.

In general, sunset provisions are appropriate where there is substantial uncertainty about the efficacy of a rule and where the passage of time and subsequent events will provide information leading to a different outcome; where the rule is based in part on a particular market condition (e.g., insufficient competition) that is on a clear trajectory to be alleviated in the future; and where, because of largely ephemeral current events (e.g., financial market distress,

⁶² See Notice, at paras. 55-62.

⁶³ Notice, at para. 45.

excess capacity) there is substantial pressure to fashion rules responsive to temporary conditions. The UNE rules fit these “sunset” qualifying conditions quite well.

In line with the infrastructure investment focus that is at the heart of our comments, there is a strong public policy rationale for incorporating some form of “sunsetting” into the UNE regime. No doubt the mere passage of time and unforeseen technical or economic developments will alter the extent to which elements meet the “necessary” and/or “impair” standards or their conformity with the other statutory goals-based criteria discussed above. There is a real danger that unduly burdensome and costly UNE requirements will survive well beyond the time when inevitable technological and market changes render them obsolete or counter to the public interest. Thus, the Commission ought to anticipate the built in obsolescence of the UNE regime by providing now for some form of sunsetting for some or all of them.

The expansiveness of the UNE regime is often justified on infrastructure grounds by claims that it will allow entrants to build equity internally and use it to transition over time to full-fledged facilities competition. We have spelled out the reasons why this proffered justification is not compelling and why it is appropriate for the Commission to limit the ongoing transition time to amplify the incentive of entrants to migrate to full facilities-based rivalry. The Commission should establish a “sunset” framework for the UNE requirements in order to provide the proper incentives to reach the facilities-based “end game” that it acknowledges best promotes consumer welfare. As long as the potential exists to keep the

current regime in place indefinitely, the CLECs will have much less incentive to devote their energies to investing in new infrastructure and much more incentive to devote their resources to litigation that preserves the *status quo*.

The Commission has authority to establish a sunset regime for the UNE rules under its forbearance authority discussed above.⁶⁴ After all, establishing a time in the future to eliminate the application of a rule is merely a narrower exercise of the authority to forbear from regulation at present.⁶⁵ While, in general, the UNE requirements should sunset sooner rather than later, we believe the benefits of establishing a definite sunset regime are so substantial that we would be willing, as a trade-off, to see a somewhat longer transition period than otherwise might be justified. Once all of the market participants know that the current rules will sunset at a date certain, even if that date is not as early as we might prefer, they will be forced rather quickly to begin adapting their planning for the coming free marketplace environment.

V. Conclusion

For the foregoing reasons, the Commission should act promptly to establish a less burdensome, less costly, less regulatory UNE regime. As explained in these comments, it is necessary to do so if the Commission is to fulfill its responsibility

⁶⁴ It should be emphasized that for the same reasons that the Commission has the authority to establish a sunset regime, it possesses the authority to make a reasoned determination to re-impose regulation if necessary to fulfill its statutory mandate. In other words, if the marketplace situation changes so that the regulations that have been “sunset” should be re-imposed, the Commission will possess the authority to do so.

⁶⁵ While we prefer pre-ordained automatic sunset rules, if the Commission doubts its legal authority to adopt them, or simply doesn’t want to “go all the way” in letting go, it could adopt rules incorporating a strong (but rebuttable) presumption that the UNE requirements should be sunset at a future time. And for the same reasons that the Commission has the authority to establish a sunset regime, it possesses the authority to make a reasoned determination to re-impose regulation if necessary to fulfill its statutory mandate.

to promote facilities-based investment—especially in new broadband networks—consistent with furthering the other statutory goals identified by the Commission, including promotion of sustainable competition. The Commission is rightly exploring other options as well for reducing existing regulations that impede

Investment in new broadband networks. But it should avail itself of all opportunities, including this one, to accomplish this important objective.

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April 5, 2002